PROVIDER CHOICE FOR OUTPATIENT HEALTH CARE SERVICES IN INDONESIA: THE ROLE OF HEALTH INSURANCE

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ABSTRACT

Background: *Indonesian's health care system is characterized by underutilized of the health-care infrastructure. One of the ways to improve the demand for formal health care is through health insurance. Responding to this potentially effective policy leads the Government of Indonesia to expand health insurance coverage by enacting the National Social Security Act in 2004. In this particular issue, understanding provider choice is therefore a key to address the broader policy question as to how the current low uptake of health care services could be turned in to an optimal utilization.* ***Objective:*** *To estimate a model of provider choice for outpatient care in Indonesia with specific attention being paid to the role of health insurance.* ***Methods:*** *A total of 16485 individuals were obtained from the second wave of the Indonesian Family Life survey. A multinomial logit regression model was applied to a estimate provider choice for outpatient care in three provider alternative (public, private and self-treatment). A policy simulation is reported as to how expanding insurance benefits could change the patterns of provider choice for outpatient health care services.* ***Results:*** *Individuals who are covered by civil-servant insurance (Askes) are more likely to use public providers, whilst the beneficiaries of private employees insurance (Jamsostek) are more likely to use private ones compared with the uninsured population. The results also reveal that less healthy, unmarried, wealthier and better educated individuals are more likely to choose private providers than public providers.* ***Conclusions:*** *Any efforts to improve access to health care through health insurance will fail if policy-makers do not accommodate peoples' preferences for choosing health care providers. The likely changes in demand from public providers to private ones need to be considered in the current social health insurance reform process, especially in devising premium policies and benefit packages.*

Key words: *health insurance, provider choice, Indonesia*

INTRODUCTION

The Indonesian health sector is facing a key policy question: how could the uptake of formal health care services be increased so that the population health status, which is largely dependant on the morbidity and mortality due to "avoidable" causes, could be improved? The demand for health care became worst during the economic crisis that hit Indonesia in 1997. Since then, the price of health care services has risen significantly. The price of medical treatment at public health centres, for example, increased by an estimated 67% during the crisis, apparently due to the increase in price of drugs (Bärnighausen and Sauerborn, 2002). As a result, the demand for health care declined by about 40% between 1997 and 1998 (Chawla and Ellis, 2000). Another study comes to a similar conclusion that the crisis led to a substantial reduction in health service utilization. In fact, an analysis based on a household survey revealed that the proportion of respondents who reported an illness or injury and sought care from a formal health care provider declined by 25% (Frankenberg and Karoly, 1995). The pattern of provider choice is changing fast. A recent assessment suggest that poor people tend to make much greater use of non-medical health staff and have lower hospital utilization rates (Frankenberg and Thomas, 2000).

One of the ways to improve the demand for formal health care is through health insurance (Frankenberg, et al., 2001), (Feldstein, 1993). Responding to this potentially effective policy lead a number of countries have undertaken substantial expansions of their formal health insurance(Gertler, et al., 1987). In Indonesia, a social health insurance (SHI) for civil-

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servants (*Askes*) has been implemented since 1968. The government also promoted a SHI for private sector employees (*Jamsostek*) in 1992 (Greene, 1997). In 2004, the president signed the National Social Security Act which stipulates that all residents contribute to the proposed SHI scheme, with government paying the contributions for the poor (Hotchkiss and Jacobalis, 1999).

At present, the Indonesian health care services rely on a mix of public and private providers to deliver health care. The public sector providers include public hospitals, public health centers and public health subcenters which provide health services at heavily subsidised prices. The private sector providers include private hospitals, private clinics, and private practitioners. Private providers are increasingly becoming important source for receiving health care services. Overall, the rate of utilization in public facilities is dropping fast, as more and more Indonesians tend to choose a private health service provider. For example, a World Bank estimate suggests that the private sector is the dominant provider of health care in most areas of Indonesia and now accounts for more than two-thirds of ambulatory care, more than half of hospital contacts and 30–50 percent of all deliveries compared with only about 10% a decade ago (Frankenberg and Thomas, 2000). Therefore, understanding provider choice is a key to address the broader policy question as to how the current low uptake of health care services could be turned in to an optimal utilization. While there has been study published on provider choice in developing countries' context (Kreider and Nicholson, 1997), the Indonesian case deserves special attention as the country is on its way to universal coverage through SHI (Lavy and Germain, 1994).

METHODS

Study Design

This study used a cross-sectional design to investigate the association of health insurance and other covariates with provider choices for outpatient health care services. The analytical framework employed in this study is a discrete choice model as described in Gertler et. al. (1987) (Mariko, 2003). Individuals who want to use a physician, either because of a health shock (acute illness), a follow up of a chronic condition or a check-up, must choose between various health provider alternatives. Based on their health insurance status, health status, income, and other observable and unobservable characteristics, individuals choose the alternative that yields the highest utility. This means that they choose a health provider that will maximize their utility given the level of resources they command. In this context, the choice of provider depends on characteristics of the alternative providers and characteristics of the individuals.

Data

This study used the data from the second round of Indonesian Family Life Survey (*Survei Kehidupan Rumah Tangga Indonesia Tahap Kedua*, IFLS2) which was administered by the Rand Corporation, together with the Indonesian researchers and various international agencies, in 1997. The first round of the survey (IFLS1) included interviews with 7,224 households sample (around 22,347 individuals), which representative of about 83% of the Indonesian population living in 13 of the nation's 26 provinces in 1993. The IFLS2 was based on the same sample, re-interviewing the original households interviewed in 1993. The IFLS2 succeeded re-interviewing 6751 households (93.5% of IFLS1 households).

The IFLS is a continuing longitudinal socioeconomic and health survey. The survey includes data on community level variables and individual level variables. The respondents include head of the household for the individual/ household module, community leaders for the community module, and head of the facilities for the facility module. The details of both IFLS1 and IFLS2 are described elsewhere (Mwabu, et al., 1986), (StataCorp, 2001).

Dependent Variable

The dependent variable was outpatient care use which is equal to zero if the individual reported self-treatment or no-treatment, equal to one if the individual sought care at public providers, and equal to two if the individual chose care at private providers. Public providers are defined as all government owned facilities (e.g., public health centers, public hospitals, and publicly employed independent such as nurse/midwives). The private providers include private practice physicians, private clinics and private hospitals.

Note that different authors have used different measures of health care demand. It is sometimes measured by discrete binary (e.g., use of health care services, use of specific provider type) or discrete count (e.g., quantity of health care services used, cost of health care services incur) (Mariko, 2003). Consistent to the central topic of provider choices behavior, in this present study considered self-treatment, care with public providers and private providers as three alternative choices.

Independent Variable

The independent variables consist of several variables, including health insurance, health status,

Table 1. Definition variables used in the analysis

Independent variables	Definition	N	Mean	SD
Insurance status:				
Askes	1 if individual had insurance of civil servant, 0 otherwise	16485	0.0983	0.298
Jamsostek	1 if individual had insurance of private employee, 0 otherwise	16485	0.0519	0.222
Askes X income	Interaction Askes and income	16485	0.1621	0.752
Jamsostek X income	Interaction Jamsostek and income	16485	0.0710	0.409
Health status:				
Symptoms	1 if individual reported at least one symptom, 0 otherwise	16485	0.7967	0.402
ADLs limitations	1 if individual reported at least one limited ADL, 0 otherwise	16485	0.2438	0.429
GHS very good^{R}	Individual reported very good health status. Omitted group.			
Good GHS	1 if self-reported health was good, 0 otherwise	16485	0.7981	0.401
Poor GHS	1 if self-reported health was bad and very bad, 0 otherwise	16485	0.1119	0.315
Serious illness	1 if had serious ill, 0 otherwise	16485	0.1126	0.316
Socio-economic				
Female	1 if individual was female, 0 otherwise	16485	0.5510	0.497
Household size	Household size	16485	5.8522	2.554
Married	1 if individual was married, 0 otherwise	16485	0.8363	0.370
Education: no-school^{R}	Individual without schooling. Omitted group.			
Elementary	1 if individual had some primary education, 0 otherwise	16485	0.4719	0.499
Junior	1 if individual had some secondary education, 0 otherwise	16485	0.1356	0.342
Senior	1 if individual had some senior education, 0 otherwise	16485	0.2007	0.401
High	1 if individual had some higher education, 0 otherwise	16485	0.0705	0.256
Age (years)	Individual age in (years)	16485	36.64	11.54
Ln income	Log natural income (proxied by household expenditure)	16485	11.079	0.856
Electricity	1 if household had electric, 0 otherwise	16485	0.8668	0.340
Travel cost	One way travel cost to health facilities (Rp)	16485	9.7648	8.981
Travel time	One way travel time to health facilities (minutes)	16485	15.039	3.143
Location:				
Urban	1 if individual lived in urban areas, 0 otherwise	16485	0.4803	0.500
Region:Jakarta^{R}	Jakarta residence. Omitted groups.			
Sumatra	1 if individual lived in Sumatra, 0 otherwise	16485	0.1989	0.399
West Java	1 if individual lived in West Java, 0 otherwise	16485	0.1708	0.376
Central Java	1 if individual lived in Central Java, 0 otherwise	16485	0.1864	0.389
East Java	1 if individual lived in East Java, 0 otherwise	16485	0.1413	0.348
Bali dan WNT	1 if individual lived in Bali dan WNT, 0 otherwise	16485	0.1100	0.313
Kalimantan	1 if individual lived in Kalimantan, 0 otherwise	16485	0.0450	0.207
Sulawesi	1 if individual lived in Sulawesi, 0 otherwise	16485	0.0553	0.228

socioeconomic and locations. A description of how the independent variables were measured and their corresponding summary statistics are reported in Table 1.

Two types of social health insurance (SHI) schemes were included in the analysis as the main independent variable. The first SHI scheme was *Askes* Insurance. This insurance covers all civil-servants, pensioners of civil-servants and armed forces, their families, and their survivors. Mandatory contributions of Askes scheme amount to 2% of the monthly salary. The benefits of *Askes* scheme are comprehensive health care provided mainly in public health facilities.

The second SHI scheme included was *Jamsostek* which covers private sector employees and dependents up to three children less than 21 years of age. The premium rate of *Jamsostek* is 3% of monthly salary for singles and 6% of monthly salary for married employees (Lavy and Germain, 1994). The *Jamsostek* offers both public and private providers as the networks. To deliver outpatient health care services to its members, PT (Persero) Jamsostek , the insurance carrier, contracts the management of health care providers to other parties, known as a main providers (MP). The MP sub-contracts the provision of health care to other local providers. The MP generally profit oriented private organizations.

Both *Askes and Jamsostek* schemes entitle the medical costs for primary and secondary out-patient care, in-patient hospital care, maternity and delivery care, diagnostic support and drugs, specialist as well as emergency care. The member seeks care from the primary care provider (PCP) that has been arranged for them. Not only provides health care services, as gatekeepers, the PCP also determines treatments strategy to the insurance members. Such treatments may be satisfied by the PCP, or in the case of unavailability of the services in the PCP, a referral would be made to a specialist or hospital.

An interaction term for insurance and income was also included in the model. This approach allows us to investigate of whether the demand effects of insurance differ among income level. To minimize under-reported of income, a total monthly household expenditure was used as a proxy of income.

The decision to choose a particular type of provider might depend on individual's perception of the extent to which this provider will improve their health status. Hence, this study included four measures of individual's health status—(a) symptoms; (b) self-rating of general health status; (c) physical ability to perform activities of daily living; and (d) a serious illness. Also included in the analysis were a range of socioeconomic variables: per capita income, gender, marital status, education, use of electricity, age, travel costs, and travel time. The location variables included in the analyses were urban status and seven regions of the survey site.

Multivariate analysis

Whether or not an individual chooses a particular type of health care provider from a set of available alternatives can be considered as discrete choices. A powerful way to model such choices is through the use of a multinomial logit (MNL) regression[15] which is the basis for our analysis. It provides an effective and reliable means of obtaining the probability of belonging to a specific group of relevant population as well as a measure of the extent to which socioeconomic and demographic characteristics affect outpatient care use. The MNL is also consistent with the standard model of consumer choice, in which an individual chooses among options based on the utility of each alternative.

The MNL assumes that the choice of a particular type of provider does not depend on other types of providers. This assumption, commonly known as the 'independence of irrelevant alternatives' or IIA can be upheld empirically (StataCorp, 2004). I therefore employed two specification tests to test the IIA assumption of the model, viz. Hausman specification test and Small-Hsiao IIA test (Thabrany and Pujianto, 2000).

It is important to note that if the individual's motivation to join health insurance lies in the expectation of using more health care services, then an evaluation of insurance's impact on the demand for health care without correcting for this jointed-ness (commonly referred to as endogeneity problem) yields biased estimates (Thabrany, 2005), (Trujillo, 2002). Two steps were carried out to test of whether health insurance is an endogenous or exogenous variable. First, I estimated a reduced form of insurance participation using a probit model that included all independent variables in the demand equation in addition to identifying variables (Trujillo, 2002). The predicted values of the insurance variable

estimated separately for *Askes* and *Jamsostek* as well as the actual observed values of the insurance variable were then included in the demand equation. The probit R^2 values for the insurance equation were 0.31 for *Askes* and 0.21 for *Jamsostek*. The predicted values of the insurance variable when included in the demand equation were not significantly different from zero, suggesting that insurance is indeed an exogenous variable in our sample.

Second, the augmented Hausman specification test was employed. Once again, the test could not reject the null hypothesis of exogeneity. As the Hausman specification test depends largely on the availability of 'good instruments', we validated using two tests. The *F*-test rejected the null hypothesis that the coefficients of the instrumental variables in the insurance equation were equal to zero (p-value < 0.000). Based on the Sargan's test, we could not reject the null hypothesis that the instruments were uncorrelated with the error term of the demand function in both public (p-value = 0.36) and private (p-value = 0.11) models. These tests provide us with enough evidence that the instruments used in estimating the main model were appropriate, at least in our sample.

RESULTS

Table 1 provides descriptive statistics of the sample. Of the total 16485 individuals, about 10% had a cover from *Askes*, the insurance package for civil servants, and about 5% had a cover from *Jamsostek*, the insurance package for private employee. The mean age of the respondents was about 37 years, 55% of respondents were female, and about 52% respondents came from rural areas. About 80% respondents said they had at least a symptom for ill health in the recall period while 11% reported that they had a serious illness and a poor self-rating of general health status.

Estimates of the MNL regression are presented in Table 2. The estimates refer to the impact of independent variables on the choice of public and private providers with the reference category being non-use of formal care (self-treatment). The last two rows of the Table shows that the model passes the IIA assumption based on both Hausman and Small-Hsiao specification tests.

In order for us to have easier interpretation of the results, I have converted the coefficients (β) to relative risks ratio (RRR) for each provider (RRR= exp

Table 2. MNL estimation results using self-treatment as the comparison group (N = 16485)

	Public			Private			RRR
	β[a]	(se)[b]	RRR	β[a]	(se)[b]	RRR	prv/pub
Insurance status:							
Askes	0.654***	(0.101)	1.92	0.125	(0.141)	1.13	0.59
Jamsostek	0.512*	(0.270)	1.67	1.362***	(0.187)	3.90	2.34
Askes X income	0.065*	(0.040)	1.07	-0.014	(0.049)	0.99	0.92
Jamsostek X income	-0.760***	(0.239)	0.47	-0.388***	(0.112)	0.68	1.45
Health status:							
Symptoms	1.955***	(0.123)	7.06	2.436***	(0.220)	11.43	1.62
ADLs limitations	0.257***	(0.059)	1.29	0.390***	(0.079)	1.48	1.14
GHS is very good[R]							
GHS is good	0.359***	(0.114)	1.43	0.472***	(0.148)	1.60	1.12
GHS is poor	1.383***	(0.126)	3.99	1.698***	(0.164)	5.46	1.37
Serious illness	0.537***	(0.073)	1.71	0.847***	(0.084)	2.33	1.36
Socio-economic:							
Female	0.604***	(0.056)	1.83	0.250***	(0.074)	1.28	0.70
Household size	0.007	(0.011)	1.01	0.048***	(0.013)	1.05	1.04
Married	0.644***	(0.100)	1.90	-0.198*	(0.102)	0.82	0.43
Education: no school[R]							
Elementary	0.089	(0.080)	1.09	0.372***	(0.141)	1.45	1.33
Junior	0.038	(0.108)	1.04	0.459***	(0.168)	1.58	1.52

Lanjutan Tabel 2

	Public			Private			RRR
	β[a]	(se)[b]	RRR	β[a]	(se)[b]	RRR	prv/pub
Senior	0.039	(0.108)	1.04	0.512***	(0.164)	1.67	1.61
High	-0.343**	(0.151)	0.71	0.714***	(0.185)	2.04	2.88
Age (years)	-0.001	(0.003)	1.00	0.004	(0.004)	1.00	1.01
Ln. income	0.069*	(0.039)	1.07	0.431***	(0.051)	1.54	1.44
Electricity	0.495***	(0.083)	1.64	1.144***	(0.198)	3.14	1.91
Ln. travel cost (Rp)	0.004	(0.003)	1.00	0.003	(0.004)	1.00	1.00
Ln. travel time (minutes)	0.026***	(0.009)	1.03	0.027**	(0.012)	1.03	1.00
Location:							
Urban	-0.384***	(0.061)	0.68	0.193**	(0.084)	1.21	1.78
Region: Jakarta[R]							
Sumatra	0.324***	(0.119)	1.38	-0.264**	(0.127)	0.77	0.56
West Java	0.314***	(0.118)	1.37	-0.053	(0.117)	0.95	0.69
Central Java	0.242**	(0.121)	1.27	0.163	(0.122)	1.18	0.92
East Java	0.516***	(0.130)	1.68	0.578***	(0.137)	1.78	1.06
Bali & WNT	0.825***	(0.127)	2.28	0.301**	(0.144)	1.35	0.59
Kalimantan	0.692***	(0.149)	2.00	-0.902***	(0.256)	0.41	0.20
Sulawesi	0.604***	(0.151)	1.83	-0.490**	(0.236)	0.61	0.33
Constant	-7.121***	(0.504)		-13.031***	(0.686)		
Pseudo R^2	0.1438						
Wald x^2 (58)	2308.17, sign level 0.000.						
Hausman tests IIA; x^2 (30)	16.732 (omitted public), sign 0.976; 13.038 (omitted private), sign 0.997.						
Small-Hsiao tests IIA; x^2 (30)	28.890 (omitted public), sign 0.523; 23.930 (omitted private), sign 0.775.						

[a] The estimated parameters (βs) and asterisks indicate significance at the 1% level (***), 5% level (**) and 10% level (*);

[b] Robust standard errors in parentheses; [R]Omitted groups

(β)). The RRR indicates the probability of choosing a provider *j* (public or private provider) relative to self-treatment (the reference group). I also presented the RRR for private to public providers (the last column of Table 2), which give the probability of choosing private vs. public providers relative to self-treatment.

As expected, the coefficient on *Askes* is positive for both providers but it is significant for public provider only. The corresponding RRR on *Askes* for public provider is 1.92. Thus, compared to uninsured, individuals covered by *Askes* were 92 percent more likely to use outpatient care at public providers relative to self-treatment. Compared to uninsured, *Askes* members were 41% less likely to choose private providers than public ones.

On the other hand, the coefficients on *Jamsostek* were positive and significant for both public and private providers. This effect is huge. In fact, compared to the uninsured, the beneficiaries of *Jamsostek* had respectively about 67% and 290% higher likelihood to use public and private outpatient care over self-treatment. Likewise, compared with uninsured, *Jamsostek* members were 2.34 times more likely to choose a private provider than a public one.

The interaction effects between insurance status and income are significant in case of *Jamsostek* members. The negative coefficients (–0.76 for public and -0.388 for private) taken together suggest that the effects of *Jamsostek* insurance on the probability of using formal health care was higher among the poor. In contrast, the effect of *Askes* insurance on the probability of using public providers was higher among the rich.

Because the focus of this paper is on the role of insurance variable on provider choice, I will limit our description of the findings for other covariates

to the minimum. All the observable health variables had the expected signs and were highly significant. The likelihood of using a formal provider increased with decreasing health status. Having a symptom, having an ADL impairment, having a serious illness and having lower level of general health state all were more likely to be associated with the use of formal care. The coefficient of "female" was positive and significant for both public and private providers but females were more likely to choose public providers than private ones. Married individuals were more likely to choose public providers compared to self-treatment. Educational level was significantly associated with the choice of private providers only. Relative to those without schooling, individuals with elementary school were 1.3 times and those with high school were 2.9 times more likely to choose private providers than public ones. Age did not seem to play a significant role in the choice of providers compared to self-treatment.

The coefficients on income and electricity were positive and significant, indicating that individuals with a higher economic status were more likely to select a formal care provider. Consistent with expectation, individuals with higher economic status were more likely to choose a private provider than low income individuals. The coefficients on urban and seven regions were significant but showed different signs. The coefficient on "urban" for public providers was negative while for private providers it was positive. Urban dwellers were therefore 1.78 times more likely to choose private providers over public ones than rural residents. The coefficient for seven region variables on public providers was positive and significant in all regions. Whilst on private providers, the coefficient estimates were positive and significant only for East Java, Bali and West Nusa Tenggara.

Policy simulation

I present results from a simulation exercise to demonstrate how expanding the choice of providers in the benefits offered by the insurers will improve the use of formal care in Indonesia. Here, an "expansion" means including either type of providers in the benefit package. This policy simulation is particularly relevant in the light of two recent concerns: (a) expanding health insurance to reach the poor; and (b) achieving universal coverage through SHI.

The results are summarized in Table 3. The first panel shows that use of outpatient care provided by either public or private providers would increase substantially with improved insurance coverage. As a result, use of informal care (i.e. self-treatment) would decline at an overall rate of about 20%. This translates

Table 3. Simulation results

		Benefit insurance simulation		% change
		Uninsured	Insured*	
I	**Provider type**			
	Self-treatment	82.02	68.73	–19.34
	Public provider	11.95	14.99	20.31
	Private provider	6.03	16.28	62.94
II	**Provider type and income quintile**			
	Self-treatment			
	Self; 1st (lowest)	84.77	74.74	–13.42
	Self; 2nd	83.34	71.69	–16.25
	Self; 3rd	81.8	68.88	–18.76
	Self; 4th	81.22	66.88	–21.44
	Self; 5th (highest)	79.55	62.78	–26.71
	Public provider			
	Public; 1st (lowest)	12.34	16.5	25.21
	Public; 2nd	12.55	16.29	22.96
	Public; 3rd	12.81	16.09	20.39
	Public; 4th	12.05	14.8	18.58
	Public ; 5th (highest)	10.23	11.79	13.23

Lanjutan Tabel 3

	Benefit insurance simulation		% change
	Uninsured	Insured*	
Private providers			
Private; 1st (lowest)	2.9	8.75	66.86
Private; 2nd	4.11	12.02	65.81
Private; 3rd	5.39	15.03	64.14
Private; 4th	6.73	18.32	63.26
Private; 5th (highest)	10.22	25.43	59.81

Note: * insurance scheme offering both public and private providers

into the use of public providers increasing by 20% and that of private providers by 63%.

The second panel of Table 3 reveals that the highest effect of insurance on the use of formal care would be observed among those at the lowest income groups. In case of private providers, for instance, the highest effect of insurance coverage was seen in the lowest income group (about 67% increase compared to 60% among the richest). The corresponding figure for public providers was 25% increase compared to 13% among the richest.

DISCUSSION

The finding that having health insurance coverage increases individuals' probability of using formal health care substantially is an important message for policy makers, particularly in the current policy environment that is dominated by discussions around improving access to care and expansion of social health insurance (Lavy and Germain, 1994). Although such a finding has already been reported elsewhere (Thabrany, 2005); (Trujillo, 2002); (Vera-Hernandez, 1999); (Waters, 1999), our results relate to specific type of provider-network offered by two different insurance schemes in Indonesia (the *Askes* with public providers only and the *Jamsostek* with both public and private providers).

The large effect observed in the choice of private providers compared with public ones by *Jamsostek* beneficiaries may be explained in the light of perceived quality of care. There is a strong evidence-base already showing the positive and significant association between quality of health care and choice of a particular type of provider in a number of low- and middle-income countries (Waters, et al., 2003); (The World Bank, 2008). Unfortunately, this study was not able to measure the perceived quality of care for each provider and had to rely on the parametric specification (Mariko, 2003) to capture this important aspect via health status (which was significant in the choice of both types of providers). Insurance reduces the effective price that beneficiaries face for using health care (Frankenberg, et al., 2001). Given provider networks, when making choices about which provider to use, individuals choose the alternative that yields the highest satisfaction (utility). As this would mean increasing perceived quality and decreasing prices, the ultimate choice of provider actually reflects the relative trade-off between price and quality that individuals prefer. By offering private providers (perceived to have better quality), *Jamsostek* scheme reduces the relative price of quality and hence the beneficiaries were more likely to choose private providers. If we believed in the quality effect, our findings would imply that public providers may need strategies that would change people's perceptions about their "poor" quality of care.

Another important finding from this analysis is very interesting. The emerging profile of an individual who uses private providers more often in Indonesia is someone who is sicker, unmarried, better educated and has higher economic status. Higher education, coupled with more income, may increase individual's perceived productivity of private providers relative to self-care, potentially due their greater knowledge and ability to offset opportunity costs (Mariko, 2003). The result on education variable indicates that higher education increases expected productivity of private providers relative to self-care. This could be due their greater knowledge, which could enable them better to understand health production. The signs of the coefficients for the income and electricity variable were as expected.

The probability of choosing private providers had a clear trend in favor of the wealthier. The fact that private providers charge a higher price and are perceived to provide high quality led higher income individuals who had better ability to pay to derive a higher utility, thereby leading them to choose private providers. This suggests that the demand for quality was income elastic.

Gender and marital status also significantly affected demand for formal health care. The finding that women had a higher likelihood to consume health care might be due to the use of health services related to maternity (Waters, 1999). This is also supported by the significant finding on the married variable, which was positive and highly significant for public providers, where various additional aspects of age, health status, education, etc were controlled for. However, female and married people were more likely to visit public providers than private ones.

Living in urban area influences private outpatient use positively, but it influences public outpatient use negatively. Jakarta inhabitant is less likely to use public providers than public ones. Compared with those who live in Sumatra, Kalimantan and Sulawesi, Jakarta residence is more likely to choose private providers than public providers. The most plausible explanation for these findings are that private health care facilities are generally more easily accessible and extensively developed in urban than in rural areas. The findings also reveals that private providers are more easily accessible in Jakarta, East Java and Bali.

Policy Implications

Should the government decides to expand health insurance in Indonesia, as is the thrust currently, the results suggest that policy-makers need to be responsive to accommodate peoples' preferences for choosing health care providers. In the changing context in which more and more people in the country, including the poorest, are using private providers for birth delivery and treatment of child diarrhea and acute respiratory infection than public providers (Frankenberg and Thomas, 2000), any effort to improve access to health care (and subsequently health outcomes) through social health insurance will fail if policy-makers do not take this into account. People may not join the scheme and easily opt out or even not use the service given insurance if their preferences are inconsistent with the choice they have in their benefit package. This is critical when the participation in the insurance scheme is voluntary.

The findings also suggest that decision-makers need to anticipate the likely changes in demand for health care in the next few years. Indonesia is now undergoing a major policy reform in health care financing, coupled with a rapid epidemiological transition in which non-communicable diseases are increasingly becoming important while infectious diseases remain a significant part of the disease burden. At the same time, income and educational levels of the population are increasing over time. Thus, the demand may shift from public providers to private providers as our findings have indicated. This may further imply greater demand for private providers leading to increasing private health expenditures. In order for the current thrust on social health insurance to be sustainable, these factors need to be considered in the reform process, especially in setting premium policies and benefit packages.

CONCLUSION

Using data from the Indonesian Family Life survey, this study estimates a model of provider choice for outpatient care in Indonesia. The model is estimated using a multinomial logit regression. The results indicates that beneficiaries of civil-servant insurance (*Askes*) are more likely to use public providers, whilst the members of private employees insurance are more likely to use private ones compared with the uninsured population. The results also confirm that less healthy, unmarried, wealthier and better educated individuals are more likely to choose private providers than public providers. This study concludes that any efforts to improve access to health care through social health insurance (SHI) will fail if policy-makers do not accommodate peoples' preferences for choosing health care providers. The likely changes in demand from public providers to private ones need to be considered in the current SHI reform process, especially in setting premium policies and benefit packages.

An important caveat to the results of this study is that one cannot properly distinguish the differences between choice for public and private providers between the two types of insurance schemes. This study only investigates a mandatory scheme of Askes

which does not cover 'private health care services' in its benefit package, and hence lead to underestimate on the coefficient estimate for Askes insurance in the private providers. Meanwhile, the Jamsostek insurance covers the healthcare services provided in both public and private providers. This suggests, by design, that the two types of insurance schemes are not comparable each other-that is the degree of choice to the private providers between member of Askes and Jamsostek is unequal--. Although this limitation could be streamlined by including both mandatory and commercial schemes of Askes in the analyses, such approach also still warrants due to the data limitations. The commercial scheme of Askes that uses family physician, considered as the private providers, become more available in the early 2000, whilst the data that used in the analysis represent private providers market in the year of 1997.

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